REMARKS

In response to the Restriction Requirement dated June 27, 2008, Applicants have elected, with traverse, Group I, claims 1-21, for examination at this time. Applicants have amended claims 1, 22, and 45 to more particularly point out and distinctly claim certain embodiments of Applicants' invention, and canceled claim 46 without prejudice to the filing of any divisional, continuation, or continuation-in-part application. No new matter has been added by the amendments. Support for the amendments can be found in the claims and in the specification as filed, for example, at page 4, lines 17-21; and page 4, lines 25-26.

Restriction Requirement

The Examiner asserts that claims identified as Group I (claims 1-21, drawn to magnetic particles), Group II (claims 22-36, drawn to processes of making the magnetic particles), and Group III (claims 27-55, drawn to methods of using the magnetic particles) do not relate to a single inventive concept under PCT Rule 13.2, asserting that these claims lack the same or corresponding special technical feature. Specifically, the Examiner asserts that Wang *et al.* (U.S. Patent No. 5,395,688) teach magnetic particles comprising a ferromagnetic material and a polymer coating (*i.e.,* matrix), wherein the polymer coating comprises a functional group, such as carboxyl.

Applicants traverse this rejection and submit that claims 1-55 share the same special technical feature, which distinguishes the subject matter of the instant claims from the magnetic particles of Wang *et al.* Embodiments of the instant claims relate, in pertinent part, to magnetic particles, and uses and methods of preparation thereof, comprising (i) a magnetic material which is remanent upon exposure to a magnetic field, such that the particles form aggregates when suspended in a liquid phase in the absence of a magnetic field; and (ii) a matrix material which has a surface comprising functional groups which promote disaggregation of the particles in the presence of a liquid phase.

Wang *et al.* do not specifically teach or suggest a magnetic particle having each feature of the instant claims, and in particular, teach away from utilizing magnetic particle comprising both a remanent magnetic material and a matrix material, as presently claimed. For

instance, before the present application, it was a commonly held view in the art that magnetic particles for binding and separating molecules of interest should not exhibit remanence (*see, e.g.,* page 4, fourth paragraph of the instant specification). In particular, it was thought that particles exhibiting remanence could not be utilized because the remanent magnetism caused them to form aggregates. This property was considered disadvantageous because it prevented effective mixing between the particles and the molecules of interest that was considered necessary to allow efficient binding between these two components.

The present application, however, includes the discovery that by combining remanent magnetic material with functional groups on the surface of the particles which promote disaggregation, the property of remanence, previously thought to be undesirable, can be utilized to confer advantageous properties on the magnetic particles. For instance, one technical advantage associated with such a combination is that the particles are highly responsive to magnetic fields. Thus, these particles respond faster to magnetic fields, leading to shorter separation times. Such particles can also be made smaller than non-remanent particles. This property has an advantage in that smaller particles provide higher binding capacities for the target substances.

These teachings are not provided by Wang *et al.* Further, Wang *et al.* contain no specific, explicit teachings of the particles of the present invention. To the contrary, Wang *et al.* teach that the particles described therein are preferably made from superparamagnetic and paramagnetic materials (*see, e.g.,* column 3, lines 5-9). Indeed, all of the Examples of Wang *et al.* relate to the use of superparamagnetic and paramagnetic materials, which do not exhibit remanence, as presently claimed.

Even assuming, *arguendo*, that Wang *et al.* mention generally the use of remanent materials, such as ferromagnetic materials, Wang *et al.* indicate that such materials can only be used "provided centrifugation *instead of magnetic separation* is used during the clean up" (*see, e.g.,* column 3, lines 5-9 of Wang *et al.*) (emphasis added). In view of this teaching, a person skilled in the art at the time of filing would have expected magnetic separation to induce remanence in ferromagnetic metal oxide materials, and that such a result was clearly to be avoided for use in magnetic separation, as presently claimed. The use of a magnetic material

that is remanent upon exposure to a magnetic field is clearly not a feature of the particles of Wang *et al.* Instead, in this regard, Wang *et al.* teach away from the instant claims.

Moreover, Wang *et al.* do not disclose the use of functional groups at the surface of the particles to promote disaggregation of said particles. To the contrary, Wang *et al.* merely use functional groups for passive or covalent coupling of biological materials, such as antigens or antibodies. For instance, as illustrated by the Examples, the functional groups of Wang *et al.* are used to attach biological molecules for immunoassays (*see* Example 35) or cell separation (*see* Example 38). Contrary to the Examiner's assertion, Wang *et al.* contain nothing, inherently or otherwise, to suggest that such functional groups would be able to promote disaggregation of the particles in the presence of a liquid phase. Further, Wang *et al.* disclose that a matrix layer with functional groups is merely optional and not essential. In contrast to the instant claims, a person skilled in the art is not taught that this layer is essential to the performance of the magnetic particles of the instant invention.

Therefore, Wang *et al.* contain no direct and unambiguous disclosure of particles comprising functional groups that promote disaggregation of the particles in the presence of a liquid phase. Still less is there a direct and unambiguous disclosure of this feature in combination with a magnetic material that is remanent upon exposure to a magnetic field. Given the reliance of Wang *et al.* on superparamagnetic and paramagnetic materials in the exemplary and functional magnetic particles described therein, this reference fails to teach or suggest with any degree of specificity the preparation or use of magnetic particles comprising both a remanent magnetic material and a matrix material comprising a functional groups that promote disaggregation. Thus, Wang *et al.* not only fail to teach or suggest each feature of the instant claims, but teach away from the same.

Accordingly, consistent with the requirements under PCT Rule 13.2, Applicants submit that the instant claims share the same technical feature over the magnetic particles of Wang *et al.*, and respectfully request reconsideration and withdrawal of the instant Restriction Requirement.

Consideration of the elected claims is now respectfully requested.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

/William T. Christiansen/
William T. Christiansen, Ph.D.
Registration No. 44,614

WTC:jto

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104
Phone: (206) 622-4900
Fax: (206) 682-6031
1265072_1.DOC